Flight Line Driver Safety Program

Agenda
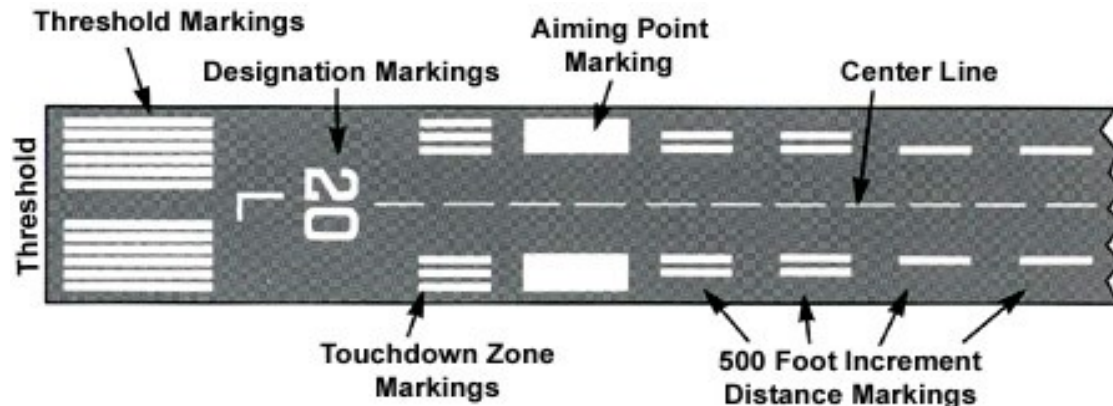
- Airport rules and regulations concerning ground vehicle operations.

- Airport diagram showing runways, taxiways, aprons, movement areas, vehicle roadways, critical areas for electronic navigational aids, and areas where vehicles are permitted to operate.

- Airport security procedures that you should be aware of and the personnel responsibility in this area.

- Procedures, person to contact, and telephone number for reporting emergencies and ground vehicle accidents.

- Seoul Airbase (K-16) Rules and Procedures

Airport Basics

- **Runways**
  Runways have specific markings on them that are white. They will have numbers on each end and stripes down the middle with white lines on the edges. Runways that are served by an instrument approach will have more elaborate markings such as those shown in the figure. The most important thing to remember about a runway is that it is meant for aircraft use, so never drive your vehicle on it unless you are authorized to do so.

Runway Markings (not to scale)

Threshold Markings
Designation Markings
Aiming Point Marking
Center Line
Threshold
20 L
Touchdown Zone Markings
500 Foot Increment Distance Markings

Taxiways

- Taxiways are areas used by the aircraft to get to and from the ramp and the runway. Taxiways look similar to runways, but are usually not as wide and they don't have the same kind of markings. Taxiway markings are yellow. Taxiways usually use letters or letter/number combinations for designators. Like runways, taxiways are meant for aircraft use. Authorization is normally required before you operate a vehicle on runways or taxiways.

Aprons or Ramps

- Aprons or ramps are the areas where aircraft park, load, and unload. Your work may require you to drive on an apron. If so, be very careful. Watch out for aircraft that are moving and always yield the right-of-way to them. Don't assume the pilot will see you and stop. He or she may be busy with other things like radio communications or checklist items.

- In addition to watching for moving aircraft, be careful not to get too close to a parked aircraft. Aside from nicks and dents that are expensive to repair, you could be hurt if an aircraft suddenly started its engine and you were too close. You should also be aware of the problem of jet blast or prop and rotor wash. There have been several cases where vehicles have been overturned by jet blast. One way to tell if an aircraft is about to start its engine(s) or if the engine(s) is running is that the aircraft's flashing beacons will be on.

Signs

- The colors and sizes of signs are important. If the sign has white numbers on a red background, it is a runway holding position sign. These signs are important because they mean you are on the edge of the protected area around a runway and must have permission to proceed.
- A white sign with black letters is a guidance sign. A black sign with yellow letters is a location sign. The taxiways at your airport may have these signs next to them. Examples are CARGO or TERM to identify what the parking area ahead is used for, or the direction to go to find that area.

#5

Signs Continued

- A driver would see these signs and markings when holding short of taxiway 5

Signs Continued

Some airports have different markings. A taxiway sign with yellow letters and a black background will tell you which taxiway you are on and helps you determine your location. Some airports have these signs painted on the taxiways (see Figure 1 and 1a). Other airports have geographic position markings to use in determining a point on a taxiway (see Figure 2). Not all airports have implemented location signs and geographic position markings.
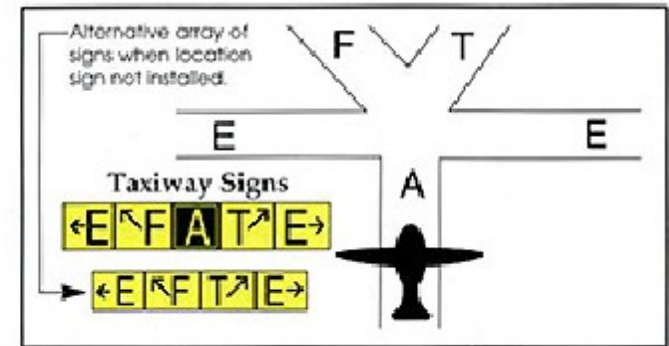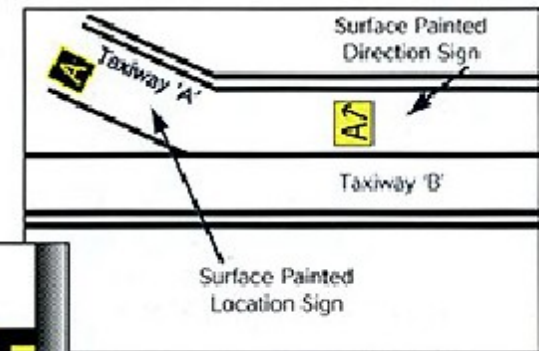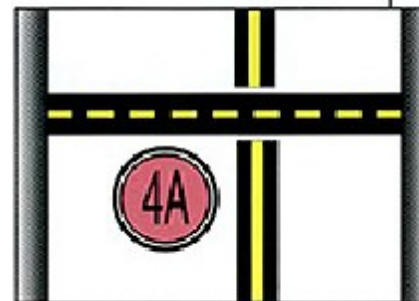
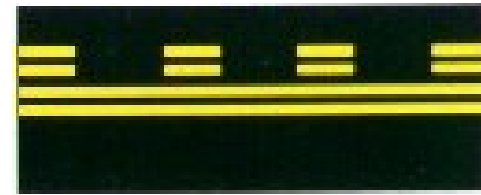

Figure 1

Figure 1a

Figure 2

Lights

♦ Runways are edged with white lights and taxiways have blue lights. Near the ends of runways, the lights may be two-sided. Amber on one side, white on the other. At the end of the runway you may also see runway threshold lights. These are red on one side, green on the other. If the amber or red lights are visible you may be approaching the end of the runway. Remember, runway edge lights are white and taxiway edge lights are blue.
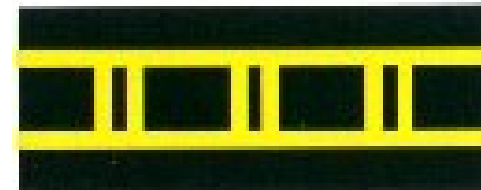
Markings

- Runway markings are painted white. Taxiways have yellow markings. The center of the taxiway has a solid yellow stripe. The sides may have one or two solid yellow stripes along the edge. Again, not all airports have these markings. As the taxiway comes up to the edge of the runway, you may see what pilots call a "hold" line that looks like this.

- It is two solid yellow stripes followed by two broken yellow stripes. This is the airport version of a stop sign. Along the side of the taxiway next to the hold line, there may be a runway holding position sign (red and white) with the runway number. At tower controlled airports, a clearance is required to pass either of these markers and enter the runway. When exiting the runway you may see hold signs with the same marks that appear on the taxiways. Be certain to go beyond these hold markings and signs.
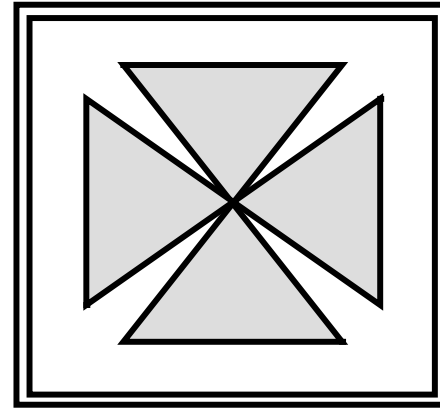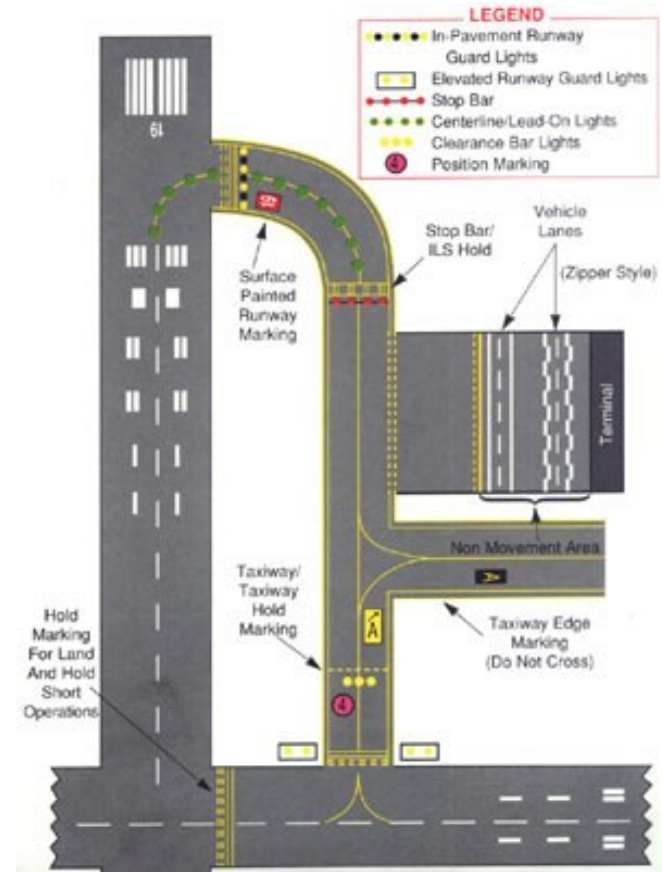

Hold Line Marking

ILS Holding Mark

Markings Continued

- Ramps have markings, as well, for aircraft parking and tie downs. Some airport ramps have special markings for vehicle operations. If there are vehicle or roadway markings, you should always drive your vehicle within those marked areas. Taxiways may also be marked on the apron to show aircraft routes to gates and parking areas.

- Some airports have designated helicopter landing pads. This is depicted with a "Maltese" inside of a square. Be especially careful when you drive near helipads and look up for landing helicopters. Like all aircraft, you must yield the right-of-way to a helicopter.

Markings Overview

Navigational Aids

♦ When driving near navigational aids, stay out of the protected areas around them to avoid interfering with their signals. If a road or taxiway is close enough to an ILS to affect it, there should be an ILS holding position sign like the one mentioned earlier.

Navigational Aids

More Signs

- There may be signs to remind pilots of noise abatement procedures or warning signs that tell vehicle operators not to proceed beyond a certain point. You may see markings that identify the area of the airport under air traffic control. These markings are yellow and consist of two yellow lines, one solid one dashed. The dashed line faces the area controlled by ATC. Other signs include "distance remaining" signs on the runway to tell the pilot how much runway length is left.

3,000 feet remaining on runway

Controlled Airports

- If your airport has an air traffic control tower, it is called a "controlled" airport whenever the tower is operating. That means anyone wanting to fly into or out of the airport must first get permission from the controller. Aircraft on the ground and vehicles must also get permission from the controller to be on the runway or taxiways. (Controllers call these areas "movement areas"). **As an operator of a vehicle, you must get the controller's permission before you go onto a runway or taxiway, their associated safety areas, or any other part of the movement area.** There are at least two ways to get permission, by radio or advanced coordination with ATC. Check the airport diagram and be sure of the location of the movement areas.

Radio Communications Procedures

- Use an air-to-ground radio with the airport's ground control frequency on it. Each vehicle should have a call sign identifying the vehicle.

- Know the proper phraseology and never use Citizen's Band (CB) lingo or law enforcement "ten" codes.

- Think about what you are going to say before calling the controller.

Radio Communications Procedures cont.

- Use the proper sequence in calling the controller. Before you start talking, make sure that no one else is already talking. Then you should:
  - Say who you are calling and who you are.
  - Wait for the controller to respond. When the controller responds, state where you are and where you want to go.
  - The controller will either approve or deny your request, or issue special instructions. Always repeat a "hold short" clearance.
- Note: Use extreme caution when you hear the phrase "go ahead." Controllers use this to mean "state your request." It never means "proceed!"

Non-towered Airports

- When the tower is closed or if there is no tower, the airport is called non-towered.
- At a non-towered airport you don't have to get a controller's permission before going onto a runway or taxiway.
- If there is no tower, look for a base operations office prior to entering the airport area.
- You should, however, always carry a radio tuned to the airport's common traffic advisory frequency (CTAF) usually called UNICOM.
- When you get near the runways and taxiways, SLOW DOWN! Look both ways, and then look UP for aircraft that are landing or taking off.
- Always yield the right-of-way to taxiing aircraft and give them plenty of room. If an aircraft is on the same taxiway as you and headed in the opposite direction, move out of the aircraft's way.
- Be careful not to hit taxiway edge lights.
- If an aircraft is about to land on a runway that you need to cross, stop and yield to the aircraft until it has landed and taxied clear of the runway. Then proceed.

Traffic Patterns

- Aircraft approaching a runway for landing follow a pattern. In most cases, the pattern is a rectangular box with the pilot making all turns to the left. In a few cases, airports will use right traffic patterns. Pilots announce their position using the names for segments of the traffic pattern (e.g., Woodbridge traffic, Cessna 83 Bravo downwind, approaching base runway 19, Woodbridge). Remember that some aircraft that are not equipped with radios will be operating at non-towered airports, so always visually scan for traffic.

Downwind

Entry

Crosswind

Base Leg

Aircraft departing on 45 degree angle

Upwind

RUNWAY

Final

Straight out departure

Traffic Patterns

- Aircraft at non-towered airports frequently make "touch and go" landings where immediately after landing, full power is applied and the aircraft takes off again. Before you cross a runway, make sure the aircraft has exited the runway or has gone past you.
- Extra vigilance is key at non-towered airports. Aircraft do not have to communicate or announce their position in the pattern or on the surface. Some aircraft don't have radios. You can be lulled into complacency at non-towered airports because they usually aren't very busy, hence they don't justify a control tower. If you are used to not seeing any other traffic, don't expect this to always be the case. If your vehicle has a rotating beacon, be sure to turn it on anytime you are on the airport surface.
- Sometimes the runway gradient makes it impossible to see the entire length of the runway and an aircraft can suddenly appear when you are crossing. It's best to cross runways at the end.

Aviation Phraseology

- Acknowledge - Let me know you have received and understand this message.
- Advise intentions - Tell me what you plan to do.
- Affirmative - Yes.
- Confirm - My version is.. is that correct?
- Correction - An error has been made in the transmission and the correct version follows.
- Go ahead - State your request (never means "proceed").
- Hold - Stop where you are.
- Hold short of... - Proceed to, but hold short of a specific point.
- Negative - No, or permission not granted, or that is not correct.
- Proceed - You are authorized to begin or continue moving.
- Read back - Repeat my message back to me.

Aviation Phraseology

- Roger - I have received all of your last transmission. (It should not be used to answer a yes or no question.)

- Say again - Repeat what you just said.

- Standby - Wait... I will get back to you. (Standby is not an approval or a denial. The caller should reestablish contact if the delay is lengthy.)

- Unable - I can't do it.

- Verify - Request confirmation of information.

- Wilco - I have received your message, understand it, and will comply.

The Aviation Alphabet

- A   Alpha
- B   Bravo
- C   Charlie
- D   Delta
- E   Echo
- F   Foxtrot
- G   Golf
- H   Hotel
- I   India
- J   Juliet
- K   Kilo
- L   Lima
- M   Mike

- N   November
- O   Oscar
- P   Papa
- Q   Quebec
- R   Romeo
- S   Sierra
- T   Tango
- U   Uniform
- V   Victor
- W   Whiskey
- X   X-ray
- Y   Yankee
- Z   Zulu

Light Signals

- Air traffic controllers have a backup system for communicating with pilots if the aircraft's or controller's radios fail. Controllers use a light gun with different colors to tell pilots or vehicle drivers what to do. If you are ever working on a runway or taxiway and your radio quits, you should turn your vehicle towards the tower, start flashing your headlights and the controller will signal you with the light gun.

- This may take some time if the controller's attention is directed towards another part of the airport. Alternatively, try another frequency (the tower or "local control" frequency) or telephone the tower if you have access to a phone. BE PATIENT! Even a failed radio is not an excuse for proceeding without a proper clearance.

Light Signals and Their Meanings

Light signals and their meanings:

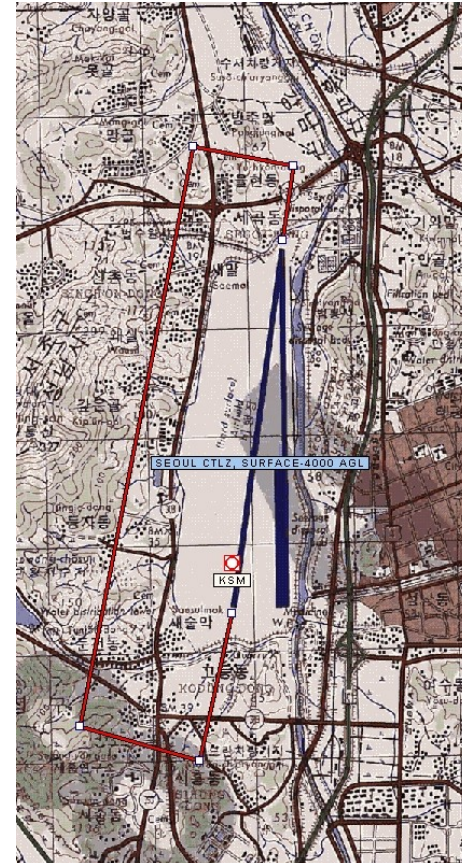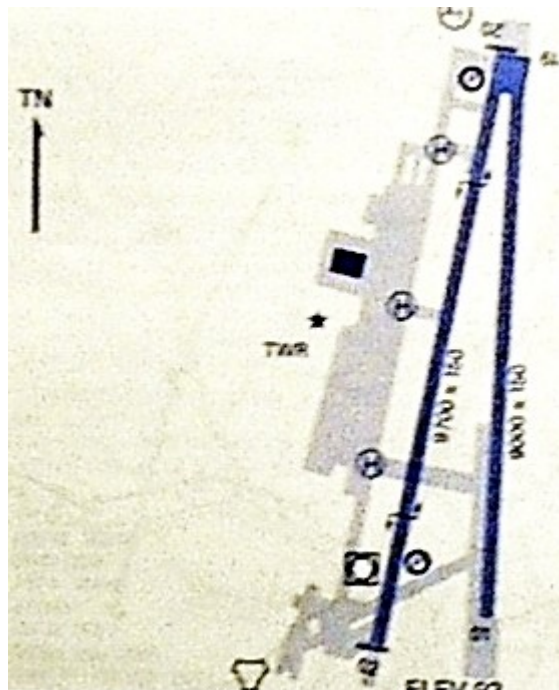|	
Steady green -	Okay to cross runway or taxiway; proceed; go.
Steady red -	Stop.
Flashing red -	Clear the runway or taxiway.
Flashing white -	Return to starting point on airport.
Alternating red and green -	General warning signal. Use extreme caution. *Note*: The warning signal is not a prohibitive signal and can be followed by any other light signal as circumstances permit.

Emergency Operations

◆ Aircraft Rescue And
Fire Fighting (ARFF):
Just as when you are
in highway traffic, if
you see an airport
emergency vehicle
with its lights on, pull
out of its way and do
not proceed until it is
well clear of you.

Other Important Information

- Foreign Object Damage (FOD): Trash or rocks sucked into a jet engine can shred parts of the engine in seconds. Get in the habit of picking up any trash and rocks near aircraft movement areas. Avoid tracking mud and rocks onto the pavement surfaces.
- Reporting Accidents: If you are involved in an accident, report it immediately to your supervisor.
- Security
  - Depending on the type of airport you work on, the security system may be as simple as a fence or it may include items as complicated as computer controlled automatic gates with television screen monitors.
  - If you see a gate left open, close it, and then report it to the airport security office. If you see a strange vehicle on the apron or a vehicle that appears lost, stop it and offer assistance.
- Nighttime or Bad Weather Driving

Seoul Airbase (K-16)

Seoul Airbase (K-16) Rules

- Vehicle Operations
  - Privately owned vehicles (POV) are not permitted to operate on the airfield. Request for exceptions will be considered on a case by case basis by the Airfield Manager.
- Speed limits for all vehicles (except crash/rescue vehicles responding to an emergency) are as follows:
  - General Purpose/Admin Vehicles - 15 MPH
  - Towing vehicles- 5MPH
  - All vehicles within 50' of aircraft - 5 MPH
- NOTE: These limits are maximum speeds. During icy conditions or periods of reduced visibility, drivers are expected to exercise good judge and to reduce speed.

Seoul Airbase (K-16) Rules

- All vehicles operating beyond Dragon ramp on the airfield will have a light gun signal identification placard prominently displayed for the drivers.
- Vehicle drivers will ensure that their tires are checked for FOD immediately upon returning to a paved area after operating "off-the-road". Drivers will be responsible for any mud or other FOD left on the paved areas, and will clean the areas immediately.
- Emergency flashers will be turned on except when they would constitute a distraction to aircrews (e.g., during NVD ops).
- Emergency vehicles have the right-of-way.
- Taxiing or towed aircraft have the right-of-way.
- Obey ATC light gun signals at all times.
- Vehicle parking is prohibited in aircraft parking areas, runway, or taxiways.

Seoul Airbase (K-16) Rules

- Unless directed otherwise (e.g., during NVD operations), headlights will be turned ON at night and during periods of reduced visibility.

- Tenant units are responsible for ensuring that their personnel are trained in the correct procedures for vehicle operations on the airfield. This training (qualification) must be documented on the individuals SF 46 prior to being allowed to operate on the airfield.

- Bicycles are prohibited on aircraft taxiways and runways without prior coordination with Base Ops.

Seoul Airbase (K-16) Rules

- Personnel may approach operating aircraft only with clearance from the aircraft commander.
- Personnel will stow vehicle radio antennas before entering aircraft operating or parking areas.
- Personnel will not drive vehicles directly towards aircraft.
- Vehicles will maintain a minimum distance of 10 feet.
- Personnel will not leave vehicles unattended close to aircraft unless the engine is off, the transmission is placed in low (or park), the parking brake is set, and the wheels are chocked.
- All vehicles 21/2 tons or greater must have a ground guide when operating on Dragon Ramp. Cargo HUMVEEs with cargon canvas installed must also have a ground guide when operating on Dragon Ramp.
- Personnel will not attempt to back a vehicle into position near an aircraft alone.
- To back a vehicle in or around aircraft, the driver must stop the vehicle completely 20 feet from the aircraft or rotor blades, and a ground guide must direct the driver.

Seoul Airbase (K-16) Rules

Flight Line Police

- Pre-heaters, APUs, maintenance stands, and other related objects will be Removed from the immediate vicinity of parking aprons and taxiways when not in use. No material Will be left in these areas without prior approval from Base Ops.

- Tenant and transient personnel are responsible for the overall police and elimination of fire and safety hazards (e.g., FOD) throughout areas occupied by their personnel and equipment. All units are expected to notify Base Ops immediately should situations beyond their control or capability arise.

- Fuel samples will not be left in aircraft parking areas. All fuel samples will be disposed of in the containers provided for that purpose along the maintenance ramps.

- Loose items (tools, aircraft panels, etc.) will not be left unattended or unsecured at any time

Seoul Airbase (K-16) Rules

- ◆ Damage to Airfield Grounds
  - • Units utilizing the airfield will make every effort to avoid causing damage to the grounds.
  - • The repair of all damage is the causing unit's responsibility. Action will be taken immediately to repair the area and ensure that personnel are instructed in proper operating practices. Base Ops will be notified of any damage.
- ◆ Ground Training
  - • All ground training on the airfield will be coordinated in advance with Base Ops, and is subject to the approval of the Airfield Manager. This includes FARP training, sling loading, emergency drills, ARTEP, PT, and "Sergeants' Time" activities.

Seoul Airbase (K-16) Rules

- Hazardous Cargo
  - All operations with hazardous cargo will be coordinated in advance with Base Ops.
- Fuel Spills
  - In the event of a fuel spill, Base Ops will be notified immediately. Every effort will be made to stop or contain the spill and secure the area. Absorbent material will be used to soak up the spill. The responsible unit will be required to thoroughly clean the area.
  - A Serious Incident Report (SIR) will be forwarded through command channels if the spill is more than 5 gallons.

Seoul Airbase (K-16) Rules

Refueling Procedures

- Safety is a major concern for all personnel dealing with aircraft refueling.
- Refueling trucks will park parallel to aircraft while conducting refuel operations.
- All personnel involved in refueling will:
  - Have their sleeves rolled down
  - Wear proper hearing and eye protection (splash proof goggles)
  - Wear gloves
  - Use explosive proof lighting
  - Be familiar with the location and operation of fire extinguishers and emergency shut off valves.
- Refueling will take place only on hard stand surfaces where adequate grounding points are available.

Seoul Airbase (K-16) Rules

- Lightning
  - Refueling operations will cease when lightning is suspected or reported within 5 nautical miles.

Questions & Comments